FIG. 4B

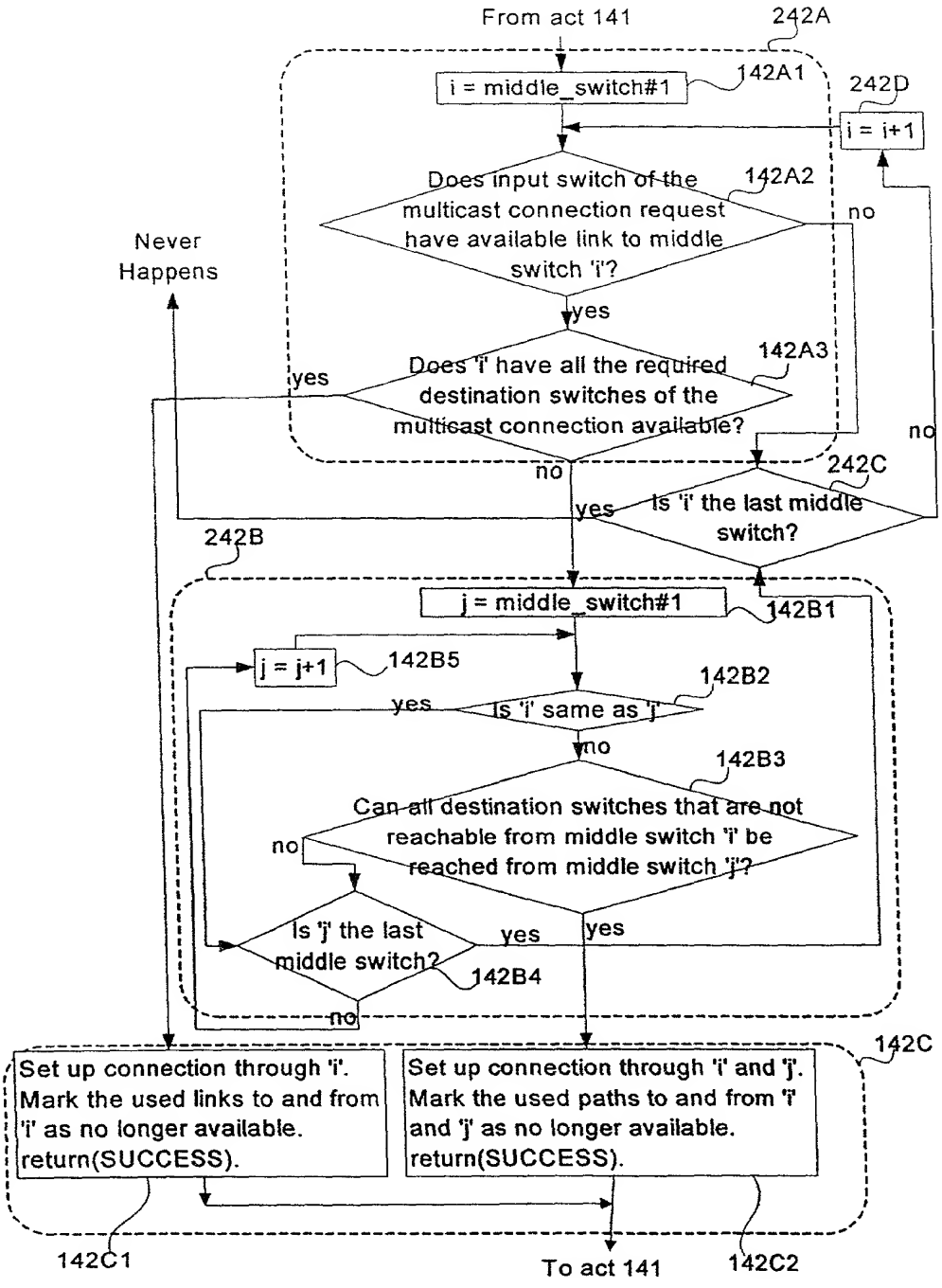

From act 141
242A
i = middle_switch#1
142A1
242D
i = i+1
Does input switch of the multicast connection request have available link to middle switch 'i'?
142A2
no
Never Happens
yes
Does 'i' have all the required destination switches of the multicast connection available?
142A3
yes
no
no
242C
yes
Is 'i' the last middle switch?
242B
j = middle_switch#1
142B1
j = j+1
142B5
142B2
yes
Is 'i' same as 'j'
no
142B3
Can all destination switches that are not reachable from middle switch 'i' be reached from middle switch 'j'?
no
Is 'j' the last middle switch?
yes
yes
142B4
no
142C
Set up connection through 'i'. Mark the used links to and from 'i' as no longer available. return(SUCCESS).
Set up connection through 'i' and 'j'. Mark the used paths to and from 'i' and 'j' as no longer available. return(SUCCESS).
142C1
To act 141
142C2

FIG. 4C

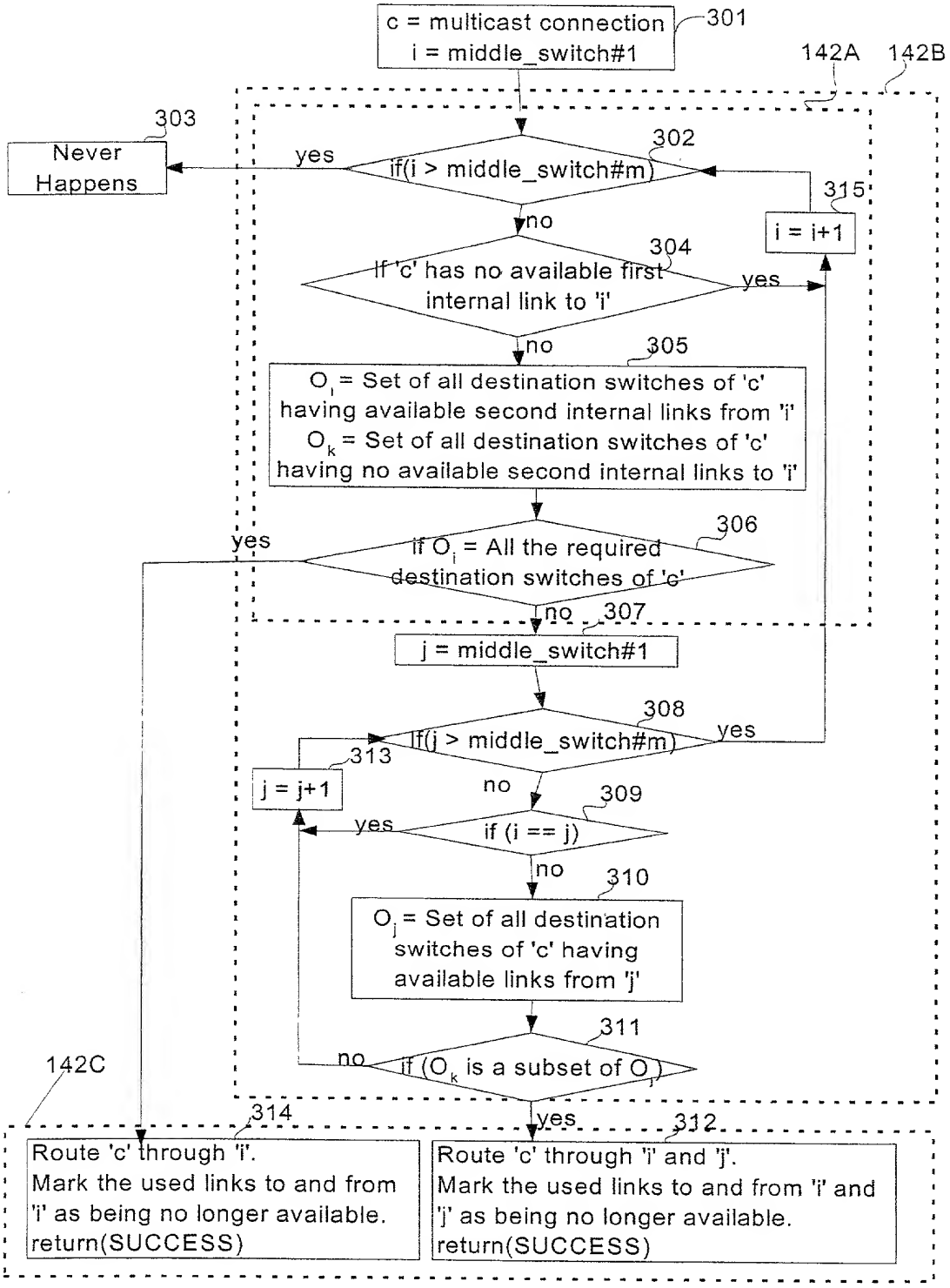
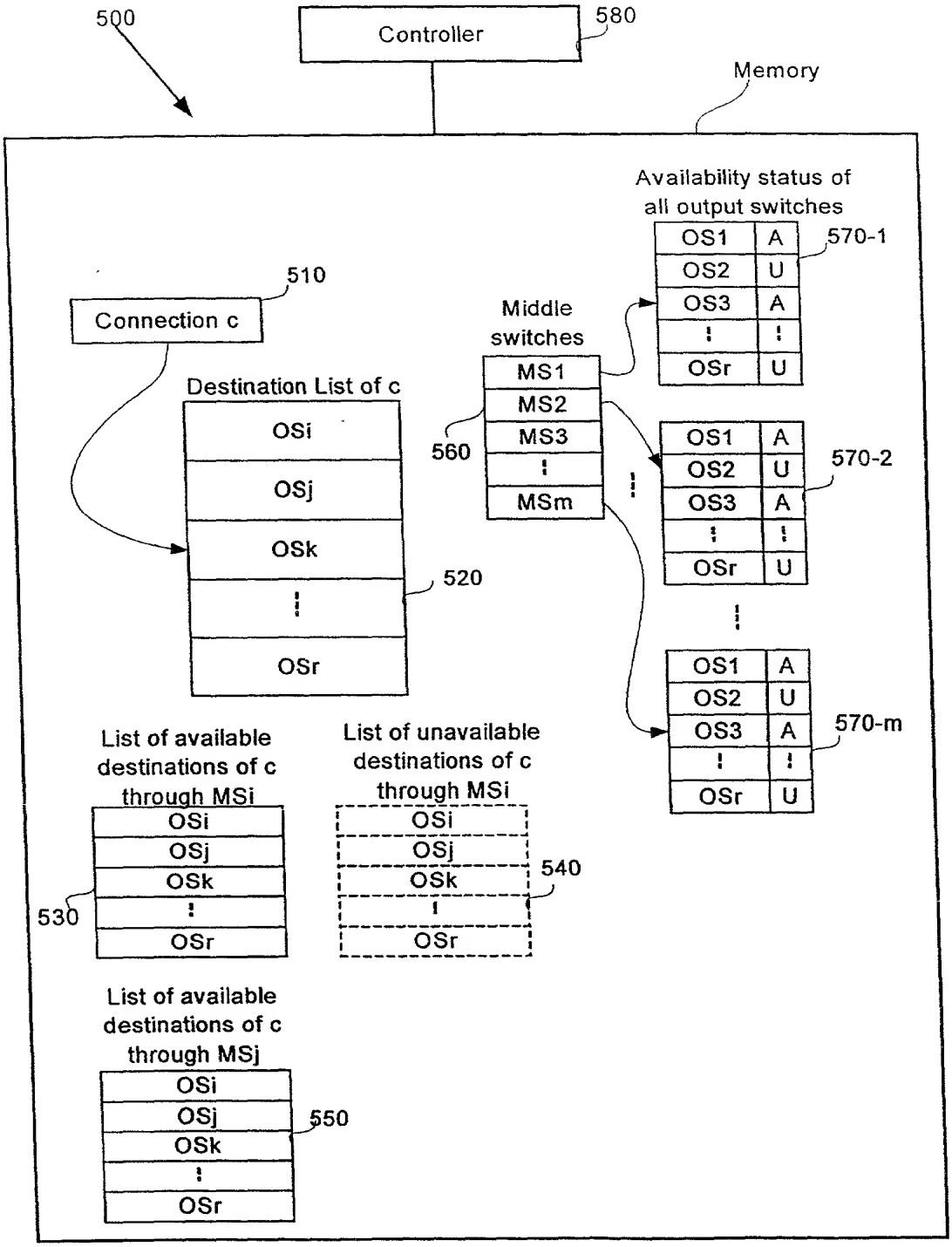

c = multicast connection
i = middle_switch#1
301
142A
142B
303
Never Happens
yes
if(i > middle_switch#m)
302
315
i = i+1
no
if 'c' has no available first internal link to 'i'
304
yes
no
305
O_i = Set of all destination switches of 'c' having available second internal links from 'i'
O_k = Set of all destination switches of 'c' having no available second internal links to 'i'
yes
if O_i = All the required destination switches of 'c'
306
no
307
j = middle_switch#1
if(j > middle_switch#m)
308
yes
313
j = j+1
no
309
yes
if (i == j)
no
310
O_j = Set of all destination switches of 'c' having available links from 'j'
311
no
if (O_k is a subset of O_j)
142C
314
yes
312
Route 'c' through 'i'.
Mark the used links to and from 'i' as being no longer available.
return(SUCCESS)
Route 'c' through 'i' and 'j'.
Mark the used links to and from 'i' and 'j' as being no longer available.
return(SUCCESS)

FIG. 4D


500
Controller
580
Memory
Availability status of all output switches
OS1 A
OS2 U
OS3 A
OSr U
570-1
570-2
570-m
510
Connection c
Middle switches
MS1
MS2
MS3
MSm
560
Destination List of c
OSi
OSj
OSk
OSr
520
List of available destinations of c through MSi
530
List of unavailable destinations of c through MSi
540
List of available destinations of c through MSj
550